Energy Policy Update

DECEMBER 16, 2013

The Energy Policy Update electronic newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by community outreach personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

2 on Panel Call New Solar Fee Too Small

[Arizona Republic, Dec. 11] Two Arizona Corporation Commissioners are warning that the recently approved $5-a-month fee for new solar customers in the Arizona Public Service Co. utility territory that will take effect next year will be too little to avoid a major rate hike on non-solar customers. The five elected commissioners voted last month to add a fee to new solar customers to ensure they are paying some of the cost of maintaining the power grid, which they rely on throughout the day despite generating much of their own power from rooftop solar. APS had asked for fees of $50 to $100 a month on solar customers, partially offset by new subsidies, but the solar industry reached a last-minute accord with the Residential Utility Consumer Office, a state consumer advocate, and proposed the smaller fee of about $5 a month, which a majority of the commissioners approved. APS had argued for months that solar customers shift the fixed costs of maintaining the power grid onto non-solar customers because they are given full retail credit for the surplus power their solar panels send to the grid. The solar industry disagreed, saying solar customers save the utility and its customers money by deferring investments in new power plants and reducing pollution, water use and other expenses tied to power generation. SolarCity Corp. officials have said that in the upcoming APS rate case, they anticipate that a full investigation of the costs and benefits of rooftop solar will reveal such savings. Three of the five commissioners approved the $5-a-month deal between solar installers and RUCO. The two dissenters, Gary Pierce and Brenda Burns, wrote that they are troubled by the decision.

ASU Center Releases 10-Year Report on Climate, Urbanization, Water in Phoenix

[ASU News, Dec. 10] In anticipation of its 10-year anniversary, Arizona State University's Decision Center for a Desert City (DCDC) has released a major new report, "Advancing Science in Support of Water Policy and Urban Climate Change Adaptation at Arizona State University's Decision Center for a Desert City: A Synthesis of Interdisciplinary Research on Climate, Water, and Decision-Making Under Uncertainty." The report summarizes the center's major achievements in research, education and community and institutional outreach since its founding in 2004. Funded by the National Science Foundation and organized under ASU's Global Institute of Sustainability, the center is

focused on water sustainability, urban climate adaptation and decision-making under uncertainty. The center pursues research – in close collaboration with stakeholders – to create a more sustainable future.

Solar Jobs in US on the Rise

[Power Engineering, Dec. 13] Solar energy jobs in the U.S. are on the rise, by 13.2 percent from 2012, according to the Solar Foundation's newly released interactive map. More than 119,000 people work in the solar energy industry; 43,000 of those workers are based in California. California, Arizona and New Jersey are acknowledged as offering the most solar energy jobs. The Bureau of Labor Statistics show that there are currently more solar energy workers than ranchers in Texas; and comparatively, solar employs more workers than coal miners. The map also shows statistics for each state such as which companies are headquartered where and the number of solar energy jobs year-over-year.

Tucson Electric Parent Oks $4.3B Buyout

[Arizona Daily Star, Dec. 12] UNS Energy Corp., the parent of Tucson Electric Power Co., has agreed to be acquired by Canada-based utility Fortis Inc. in a deal worth $4.3 billion, the companies said Wednesday. Both of UNS utility subsidiaries, TEP and rural provider UniSource Energy Services, "will remain headquartered in Tucson under local control with current management and staffing levels and no planned changes to existing operations or rates," the companies said. The merger agreement — which still requires shareholder and regulatory approval — calls for Fortis, Canada's largest investor-owned gas and electric distribution utility, to acquire all of the outstanding common stock of UNS Energy for $60.25 per share in cash, plus the assumption of about $1.8 billion in debt. Before the merger announcement, UNS shares closed Wednesday at $45.85, down 46 cents, in trading on the New York Stock Exchange. UNS is the only Tucson-based company traded on the Big Board and one of a handful of locally based public companies. "Joining the Fortis family will provide UNS Energy with new financial strength, helping us maintain safe, reliable and affordable service for our utility customers as we address the capital-intensive challenges facing our industry," Paul Bonavia, UNS Energy's chairman and CEO, said in a news release. The proposed acquisition will be submitted early next year for the approval of UNS Energy shareholders, the company said.

ALTERNATIVE ENERGY AND EFFICIENCY

Cars Sold in U.S. Reached Fuel Economy Record, EPA Says

[Bloomberg, Dec. 12] Vehicles sold in the U.S. are on average the most fuel efficient they've ever been, averaging 23.6 miles per gallon in 2012, according to a **report** released by the Environmental Protection Agency. The 1.2 mile-per-gallon increase in the first year of a U.S. fuel-economy regulation that applies through 2016 shows automakers are on their way to meeting a second, tougher set of standards requiring improvements through 2025, an advocate of the rules said. "We are on track to hitting the 54.5 mpg standard for 2025," Dan Becker, director of the Safe Climate Campaign, based in Washington, said in an e-mailed statement. "This is a big deal. It's a big down payment on a better future." Automakers have questioned whether they can achieve fleetwide averages of 54.5 mpg by 2025, with most companies that sell cars in the U.S. agreeing to a deal that includes a review of the progress in 2018 and possible adjustment of the mandate. The report credits technologies used to improve gasoline-powered engines such as direct-injected and turbocharged engines and more efficient transmissions for the improvement.

U.S. Solar Gained 35% in Third Quarter Led by Big Plants

[Bloomberg, Dec. 9] Developers installed 930 megawatts of photovoltaic solar capacity in the U.S. during the third quarter and are on pace to almost double that, according to the **Solar Energy Industries Association**. Total installed solar power grew 35 percent from a year earlier, the Washington-based trade group said today in a statement. Utility scale projects increased 74 percent to 539 megawatts and installation of residential

systems reached 186 megawatts. The trade group expects 1.83 gigawatts of capacity to be installed this quarter, putting the U.S. on pace to reach 4.27 gigawatts for the year, according to the report. That 27 percent rise means the U.S. will install more panels this year than Germany, the biggest solar market in terms of existing capacity, for the first time in more than 15 years. Demand in Europe has waned as governments curtail subsidies.

ENERGY/GENERAL

Canada's Labor Shortage Threatens $50 Billion LNG Plans

[Bloomberg, Dec. 9] Energy companies trying to raise almost $50 billion for Canada's first network of natural gas export terminals will face an even more basic challenge: finding the workers to build them. Housing complexes boasting an indoor golf driving range, a two-story gymnasium and a private movie theater are among perks companies are mulling to lure tradesmen to Canada's remote, snow-swept West Coast and mitigate wage inflation that could blow up project budgets. Labor shortages in the country already have pushed wages for some oil and gas workers as much as 60 percent higher than their counterparts in the U.S., according to U.S. and Canadian labor data. "The lack of skilled workers is a major component for the reason why you're often behind schedule and over budget," said Geoff Hill, partner and oil and gas leader at financial advisers Deloitte Canada in Calgary. A dearth of labor for oil sands and mining will be "exacerbated" by a new wave of construction to enable gas exports, he said. Chevron Corp. (CVX) will need as many as 5,500 workers to build a pipeline across Canada's western mountains and a plant on the country's frosty Pacific Coast for shipping gas to Asia, according to company estimates.

Exxon: Rising Living Standards Propel Energy Needs

[Arizona Daily Star, Dec. 12] Exxon Mobil says the drive for higher living standards around the world will keep demand for electricity and transportation fuels growing even as economies get more efficient and governments put a price on pollution. The company's annual long-term energy outlook, released Thursday, predicts world energy demand will grow 35 percent by 2040 as electricity and modern fuels are brought to some of the billions of people in the developing world who currently live without power or burn wood or other biomass for cooking and heating. Those growing needs will be somewhat offset by a slow decline in consumption in the far more energy-hungry economies of the developed world. "People want a warm home, a refrigerator, a TV, someday a car, and a cellphone," said William Colton, Exxon's vice president for corporate strategic planning, in an interview. There are ample supplies of fuel to meet the world's demands, according to the report, and Colton concludes that average annual growth of 1 percent per year is manageable for the world's energy companies. Exxon's outlook, which forecasts world energy demand through 2040, is noted by investors and policymakers, and used by Exxon to shape its investments. "The last thing we want to do is delude ourselves about the future," Colton said. "We make billion-dollar decisions on this." The report's conclusions largely agree with those reached in other long-term energy forecasts, including a recent report by the International Energy Agency.

Senate Proposal: Open Mexico Oil to Private Firms

[Arizona Daily Star, Dec. 7] Mexican senate committee on Saturday proposed the most dramatic oil reform in decades that would open the country's beleaguered, state-run sector to private companies and investment. The Senate proposal would allow the government to grant contracts and licenses for exploration and extraction of oil and gas to multinational giants such as Exxon or Chevron, something that is currently prohibited under Mexico's constitution. It also says that contracts could be made directly with the state, rather than issued by the state-run oil company, Petroleos Mexicanos, or Pemex, ending its monopoly on Mexican oil. The proposal, which gets official committee consideration on Sunday, could allow contracts for profit- and production-sharing, as well as licenses, in which companies pay royalties and taxes to the Mexican government for the right to explore and drill. Pemex would get first consideration for licenses. It would

give private companies the ability to post expected benefits in their financial statements, as long as they specify in their contracts that all oil and gas they find in the ground belongs to Mexico, according to articles expanding on the reform. The constitution would continue to prohibit oil concessions, considered the most liberal kind of access by private oil companies. The bill still must be approved by the two houses of Congress and 17 of Mexico's 31 states and federal district. It's the crowning piece of President Enrique Pena Nieto's first year of reforms, which have also targeted education, the tax system and telecommunications.

The Shifting Economics of Coal-Fired Generation

[Fierce Energy, Dec. 11] Just months after the U.S. Environmental Protection Agency (EPA) announced carbon emission standards for new power plants and proposed standards for existing power plants are expected next year, updated research is showing a shift in the economics of coal-fired generation. Market factors are making an increasing number of the nation's coal-fired power plants less viable, economically, especially in Michigan, Alabama, Georgia, Indiana and Texas, according to researchers at the Union of Concerned Scientists (UCS). Coal-fired generation is getting increasingly expensive compared with cleaner power sources," said Jeff Deyette, assistant director of energy research at UCS and co-author of the study. "This shift in economics is a historic opportunity to modernize our electric sector and gain the economic, health and climate benefits that come with it." In addition to the 18 GW of coal units that were retired between 2011 and 2013 and the 28 GW that have been announced for retirement by 2025, another 59 GW, or about 329 generators, are no longer economically competitive and should be considered for closure, the report says. Once the costs of installing modern pollution controls are included, these generators produce electricity that is more expensive than that of an average existing natural gas plant.

INDUSTRIES AND TECHNOLOGIES

Con Edison Bringing Smart Grid to Wall Street

[Fierce Energy, Dec. 11] With one of the highest load densities in the world, Con Edison's smart grid demonstration project encompasses a complex and diverse test bed, including critical organizations such as Wall Street, the Federal Reserve, major medical facilities, and hubs for national and global communications. The objective of the Secure Interoperable Open Smart Grid Demonstration Project is to build a scalable smart grid prototype that promotes cyber security, reduces electric demand, increases reliability and energy efficiency, and is cost effective. In addition, the system will enable greater use of renewable energy, other distributed resources, electric vehicle charging and greater consumer participation in the energy mix. The system will be demonstrated in selected sites representing a cross-section of urban and suburban America: the horizontal city (Long Island City, Queens, the vertical city (lower Manhattan), and the suburbs (Orange and Rockland Counties, NY, and northern Bergen County, NJ).

DOE Releases Report on Energy Storage

[Electric Light & Power, Dec. 12] Energy Secretary Ernest Moniz released the Department of Energy’s Grid Energy Storage report to the members of the Senate Energy and Natural Resources Committee. The report was commissioned at the request of Senator Ron Wyden, Committee Chairman. The report identifies the benefits of grid energy storage, the challenges that must be addressed to enable broader use, and the efforts of the DOE, in conjunction with industry and other government organizations, to meet those challenges. Access the report at the DOE's website here.

Japanese Firms Focus on Smart Kitchen Appliances

[Reuters, Dec. 4] Companies like Panasonic and Toshiba are diverting engineers and money away from their TV operations and into developing “smart appliances” after losing out in the living room to cheaper Asian rivals. A fridge that texts pictures to show what is for dinner, a voice-controlled washing machine — appliances like these are being designed to talk to each other via the cloud to cut energy bills. For now, they are

expensive, deterring buyers: A Japan-only Toshiba smart fridge with camera runs to about $2,800 versus less than $800 for a basic model. Yet as more products come on the market and competition cuts prices, global smart appliance sales will rocket to $35 billion by 2020 from just more than $600 million last year, according to the technology intelligence firm Navigant Research. As the industry prepares to descend on Las Vegas next month for C.E.S., the world's biggest technology trade fair, that is mouth-watering for all electronics makers. But none more than Japan's.

Stationary Fuel Cell Market to See CAGR of 30.6% by 2018

[Energy Manager Today, Dec. 10] North American fuel cell market revenue is estimated to reach $667.7 million by 2018. Major factors responsible for the growth of the fuel cell market include the ability of fuel cells in stationary, portable and transportation applications, according to Research and Markets' "North American Market for Fuel Cell Technology – Trends and Forecast to 2018." The overall stationary market is expected to grow to $443.7 million by 2018, with a compound annual growth rate (CAGR) of 30.6 percent from 2013 to 2018. In terms of geographical contribution, the US will have the biggest market – around 80 percent of the entire North American market worth $352.7 million, followed by Canada at $91 million by 2018. The key concerns in the industry pertain to the high cost of catalyst, commercialization of fuel cells and establishment of fuel cell infrastructure.

Wind Power's Growth Blown Away by Tax Uncertainty

[National Journal, Dec. 9] Uncertainty over expiration of the wind production tax credit has dealt a devastating blow to the wind industry's forward march. The numbers tell the story of boom and bust. In 2012, the industry had its best year to date, installing more than 13,000 megawatts of wind-generating capacity nationwide. Utilities shied away from signing new power purchase agreements in the second half of the year, however, because of uncertainty over whether they could complete construction before the tax credit's sunset. As a result, only 1.6 megawatts of wind-generating capacity were installed in the first half of 2013. "It used to be that your project had to be online and providing electricity to the grid before the credit expired, which was a very hard and fast deadline," Alex Klein, research director for clean and renewable-power generation at IHS Cera, told National Journal Daily. "So by the time the credit was extended as part of the fiscal-cliff deal, the damage was already done to the industry." Things are a bit different this time around. When Congress extended the credit at the beginning of 2013, it altered the terms. Now, construction doesn't have to be finished before the credit expires for a project to be eligible for the subsidy—it just has to be underway. This means that while uncertainty over the credit discouraged developers and utilities from signing new PPAs in the second half of 2012, this year it may actually be fueling a push to square away contracts and break ground on projects before the credit expires Jan. 1. "There certainly is an incentive right now for utilities to procure wind energy now while there is some surety that the credit will be in place," Klein said. According to the American Wind Energy Association, the number of PPAs signed this year has increased over last year. But it's difficult to say how much the credit or other factors are responsible.

LEGISLATION AND REGULATION

DOE Makes New Investment in Small Modular Nuclear Reactors

[Electric Light & Power, Dec.. 13] The Department of Energy made a second investment in small modular nuclear reactor technology with a private-public partnership program to develop and license small modular reactor designs. DOE made the award to NuScale Power LLC for up to $226 million over five years. This follows an award granted in November 2012 to the Babcock & Wilcox Co. in partnership with the Tennessee Valley Authority (TVA) and Bechtel International.

Department of Energy Releases $8 Billion Solicitation for Advanced Fossil Energy Projects

[U.S. Dept. of Energy, Dec. 12] Washington, D.C. – As part of President Obama's

Climate Action Plan, the Energy Department published a solicitation today, making up to $8 billion in loan guarantee authority available to support innovative advanced fossil energy projects that avoid, reduce, or sequester greenhouse gases. Authorized by Title XVII of the Energy Policy Act of 2005, loan guarantees under this new solicitation will help provide critical financing to support new or significantly improved advanced fossil energy projects – such as advanced resource development, carbon capture, low- carbon power systems, and efficiency improvements – that reduce emissions of carbon dioxide, methane, and other greenhouse gas pollution. “Under the Obama Administration, the Energy Department is taking an all-of-the-above approach to American energy to ensure we develop all our abundant energy resources responsibly and sustainably,” said Secretary Moniz. “Currently providing 80 percent of our energy, coal and other fossil fuels will continue to be a critical part of our energy portfolio as we move toward a low-carbon future. By helping to accelerate the introduction of innovative, clean fossil energy technologies ready for deployment at commercial-scale today, investments under this solicitation will help ensure we continue to have access to affordable, clean energy from all our domestic energy resources tomorrow.”

Energy Department Announces $150 Million in Tax Credits to Invest in U.S. Clean Energy Manufacturing

[Energy.gov, Dec. 12] WASHINGTON – Building on President Obama’s Climate Action Plan to continue America’s leadership in clean energy innovation, the U.S. Department of Energy today announced $150 million in clean energy tax credits to build U.S. capabilities in clean energy manufacturing. The credits will go towards investments in domestic manufacturing equipment by 12 businesses. Through the Advanced Energy Manufacturing Tax Credit program (48C Program), these awards will help create thousands of jobs across the country and increase U.S. competitiveness in the global clean energy market. U.S. Secretary of Energy Ernest Moniz announced the 48C Program awards today at the Energy Department’s American Energy and Manufacturing Competitiveness Summit, jointly sponsored by the Council on Competitiveness. As part of the Department’s broader Clean Energy Manufacturing Initiative, this summit brings together industry, government, academia and the Department’s national laboratories to address national challenges in manufacturing and energy.

Outlook Cloudy for EPA's 'Good Neighbor' Rule

[National Journal, Dec. 10] A key piece of President Obama's plan for curtailing air pollution has been in legal limbo for more than a year, and a Supreme Court hearing Tuesday did little to clarify whether the so-called "good neighbor" rule is headed up or down. The justices batted around the question of whether the Environmental Protection Agency's Cross-State Air Pollution Rule oversteps the authorities spelled out in the Clean Air Act, as industry groups and some states contend in a lawsuit against the rule, which was aimed at protecting downwind areas from soot- and smog-forming pollution from power plants in upwind eastern states. The plaintiffs won a round in August 2012, when the U.S. Court of Appeals for the D.C. Circuit ruled that EPA had exceeded its authority in requiring upwind states, such as those in the Midwest, to make emission reductions greater than prescribed by the Clean Air Act in order to protect areas downwind, mostly in the Northeast. At issue is whether EPA was justified in factoring the cost-effectiveness of emissions-control technologies into proposed targets for pollution reduction rather than relying solely on air-quality thresholds prescribed under the Clean Air Act. The court will also decide whether the agency acted appropriately in imposing federal implementation plans on upwind states.

Rep. Blumenauer Introduces Bill to Double Gas Tax

After 10 years, Congress looks at increasing the federal gas tax

[U.S. News, Dec. 4] The Portland congressman's plan would gradually increase the federal gas tax over a three-year period. The money would go to rebuild roads and bridges across the country, which Blumenauer says are in disrepair. The American Society of Civil Engineers estimates that the country has $2 trillion worth of projects that need to be completed. Today, drivers pay just over 18 cents per gallon in federal taxes,

though states also tax the fuel. . Under Blumenauer's proposal, they'd pay more than 33 cents. "The gas tax hasn't been increased since the beginning of the Clinton administration," Blumenauer said during a press conference. "Today, with inflation and increased fuel efficiency for vehicles, the average motorist is paying about half as much per mile as they did in 1993. It's time for Congress to act." Groups who support the increase in the gas tax range from unions to UPS.

WESTERN POWER

Colorado Public and Private Fleets Sign NGV MOU

[NGV Forum, Dec. 11] On Tuesday, the Colorado Energy Office announced that nearly 30 private sector fleets, local governments and other interested organizations have signed onto a memorandum of understanding (MOU) to accelerate the deployment of NGVs and the development of fueling infrastructure in the State of Colorado. The MOU is designed to encourage the use of clean domestic fuel and to contribute to a more diverse transportation energy sector. The adoption of NGVs has the potential to provide fuel cost savings, create new jobs and advance the energy transportation market to provide environmental and economic benefits to the state. Gov. John Hickenlooper modeled the MOU after the multi-state MOU he and Oklahoma Gov. Mary Fallin implemented in 2011. Since then, more than 20 states have joined together to encourage Detroit to offer more NGVs at prices more competitive with comparable diesel and gasoline vehicles. As part of the MOU, the Colorado Energy Office will support interested parties, continue to work on regulatory issues and remove market barriers. Twenty-eight companies and governmental entities have pledged to “pursue the integration of NGVs into their fleet as an alternative to traditional fueled vehicles in a manner that is appropriate and compatible with their operations. In addition, all of the undersigned entities intend to work collaboratively to share fleet experiences, develop NGV fueling facilities (including partnerships with petroleum retailers) and related upstream natural gas systems, and encourage training and other initiatives necessary to develop a sustainable NGV market in Colorado.”

Enel Green Power Starts Utah Geothermal Plant

[Energy Prospects West, Dec. 10] Enel Green Power on Nov. 27 reported the start of power generation at the newly completed, $126-million Cove Fort geothermal power plant in Utah. Salt River Project signed a 20-year power-purchase agreement with an Enel Green Power affiliate for energy from the 25 MW geothermal plant. The geothermal facility will help SRP meet its goal of obtaining 20 percent of its power from renewables and energy efficiency by 2020, said SRP spokeswoman Patty Likens.

New Solar Plant in El Centro, California Starts Operations

- *NADB is providing a $65 million loan for the construction of the facility*
- *The electricity produced by the project will be purchased by Imperial Irrigation District (IID)*

[Yahoo Finance, Dec. 11] El Centro, CA – Grupo T-Solar, one of the major independent power producers of photovoltaic solar energy based in Spain, has successfully completed its first photovoltaic solar plant in El Centro, California. The North American Development Bank (NADB) is providing a $65 million loan for the construction of this project. The plant, located in the city of El Centro (Imperial Valley, California), occupies 140 acres of land and will generate 55 GWh per year, equal to an energy consumption of more than 12,000 inhabitants. The sale of energy is regulated by a 30-year power purchase agreement with the utility company Imperial Irrigation District.
“USA is one of the target markets for the growth of Grupo T-Solar and a key market of our long-term business strategy,” said Marta Martinez, CEO of Grupo T-Solar. The project in El Centro has required an investment of more than 75 million dollars and has been financed and supported by the international financial institution, NADB, as senior lender; Santander Bank NA, a subsidiary of Banco Santander, as Tax Equity Investor; Astris Finance, a financial advisory firm specializing in energy and infrastructure structured finance in the Americas, acted as financial advisor; and CCA Group, a FINRA-

registered broker-dealer specializing in renewable energy, acted as advisor for the tax equity component.

Renewable Energy Policies Boost Non-Hydropower Sources in the West

[Power Engineering, Dec. 11] Renewable portfolio standards, federal tax credits and other support has helped to diversify power generation fuel sources in the Western U.S., according to the U.S. Energy Information Administration (EIA). Coal, natural gas and hydropower continue to contribute the majority of overall power generation in the West, but state and federal policies have helped to increase the use of non-hydro renewable sources such as wind and solar. Several large-scale solar power plants have recently come online in Nevada and Arizona, adding to the renewable capacity in the West. The region also holds the largest concentration of hydroelectric capacity in the nation, and that capacity has a strong seasonal effect on both the system's fuel mix throughout the year and the region's wholesale electric prices in the late spring, when the seasonal runoff typically occurs, EIA said.

Solar Power Tower Nears Completion in Nevada

[Energy Prospects West, Dec. 10] In a major milestone for solar energy storage in the Desert Southwest, SolarReserve LLC says it will complete construction of and begin commissioning its 110-MW Crescent Dunes Solar Energy Project -- a concentrating solar power tower project near Tonopah, Nevada -- by year-end. The nearly $1-billion project, underpinned by a $737-million loan guarantee from the U.S. Department of Energy, includes 10 hours of liquid molten-salt energy storage. This distinguishes the plant from BrightSource Energy Inc.'s 377-MW Ivanpah Electric Generating Station, which recently began generating electricity in California but does not include storage. Crescent Dunes is the Southwest's second largest-scale concentrating solar power facility with thermal energy storage. In October, Abengoa's 280-MW Solana Generating Station -- a parabolic trough plant with six hours of storage -- started operations near Gila Bend, Ariz., delivering power to Arizona Public Service under a long-term contract. Abengoa uses molten salt tanks solely for storage, while SolarReserve's integrated approach uses molten salt both as a storage medium and a heat-transfer fluid.

Western Governors Approve Resolutions on Water, Radioactive Waste, Mine Reclamation, Secure Rural Schools

[Western Governors' Association website, Dec. 11] Western Governors have announced eight new policy resolutions on a variety of issues that range from water to radioactive waste, bonding for mine reclamation to Secure Rural Schools. The new resolutions approved by the Governors were announced on Wednesday (Dec. 11) at the Western Governors' Association Winter Meeting in Las Vegas. Along with previous WGA resolutions, the new resolutions form the basis for the association's efforts in the region and in Washington, D.C.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. LEARN MORE

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. LEARN MORE

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000).
LEARN MORE

- AZ Fast Grant - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are $175,000. Maximum awards of $5,000 and $20,000 will enable companies to accomplish one of four scopes of work. LEARN MORE

- AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. LEARN MORE

- Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. LEARN MORE

- Healthy Forest - The primary goal of the Healthy Forest Enterprise Incentives Program is to promote forest health in Arizona. The program achieves this by proving incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. LEARN MORE

- Job Training Program offers job-specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. LEARN MORE

- Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. LEARN MORE

- Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. LEARN MORE

Quality Jobs Tax Credit Program - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. LEARN MORE

- **Bonds Administered by the Arizona Commerce Authority**
  - Private Activity Bonds (PAB) - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. LEARN MORE
  - Qualified Energy Conservation Bonds (QECB) - Tax credit bonds are available as an alternative financing mechanism for certain green projects. LEARN MORE

Federal Programs

- Small Business Innovation Research (SBIR) Program - SBIR is a competitive program that encourages small businesses to explore their technological potential, as well as, providing incentive to profit from its commercialization. LEARN MORE
- Small Business Technology Transfer (STTR) Program - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. LEARN MORE
- Work Opportunity - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to $9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. LEARN MORE

Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Sales Tax Exemption for Machinery and Equipment
Exemptions are available for:

1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
3. Machinery or equipment used in research and development, see ARS 42-5159(B) (14).

Questions can be directed to Christie Comanita (602-716-6791).

Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Database of State Incentives for Renewables and Efficiency (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- U.S. Dept. of Energy Solar Decathlon 2015, Funding Number: DE-FOA-0000959, Response Due Date, December 20, 2013
- Solid Waste Management Grant - Response due December 31, 2013

- Energy Frontier Research Centers – Response due by January 9, 2014
- Research and Development for Hydrogen Storage – Response due January 17, 2014
- Hydrogen Delivery Technologies – Response due by February 14, 2014
- Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) – Response due by February 18, 2014
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- Plant Feedstock Genomics for Bioenergy: A Joint - Response Due Date: February 25, 2014
- **NEW!** Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 - Expiration Date 11/30/2016
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Sustainable Agriculture Research and Education Grants – Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2013

- ASU Sustainability Series Events
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ

2014

- 4th Annual Electric Energy Storage Conference
  January 14-16, 2014 San Diego, CA
- Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ

- Solar Power Generation USA Congress 2014
  February 4-5, 2014 San Diego, CA
- 2014 Energy Outlook Conference
  February 4-7, 2014 Washington, DC
- Sustainability Solutions Festival
  February 17-22, 2014 Phoenix, AZ
- Arizona Solar Summit IV
  February 20, 2014 Phoenix, AZ
- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ
- International Geothermal Energy Forum
  April 23-24, 2014 Washington, DC
- Native American Economic Development & Energy Projects Conference
  June 16-17, 2014 Anaheim, CA
- 32nd Annual West Coast Energy Management Congress
  June 25-26, 2014 Seattle, WA
- National Geothermal Summit
  August 5-6, 2014 Reno, NV
- Geothermal Energy Expo
  September 28-October 1, 2014 Portland, OR
- ASU Sustainability Series Events
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ